

The amendment filed 1/14/10 is acknowledged. Claims 4, 8, 10-13, 31, 39, and 42-46 are now pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 4, 8, and 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat. 4990748.

Referring to Figs. 1, 2 & 4, and col. 4, lines 29-68, US'748 discloses a device having an insulating frame 11 comprising parallel, spaced longitudinal struts 13 and longitudinally spaced crossbars 16 linking the longitudinal struts, and at least one contact plate 22, 26 held in grooves in the frame (the 'grooves' between elements 19 and 28) and projecting beyond the end of the frame, wherein the struts and spaced crossbars surround recesses 29 for receiving PTC elements, and at the longitudinal end portion of the frame 11, the contact plate is completely and tightly surrounded by the frame (by clip 18). Insulating parts 32 fit exactly into the spaces formed by the longitudinal struts 13 and crossbars 16 "on a side of the contact plate remote from a reception side for the PTC elements," so as to form a composite frame structure that "completely cover[s]" the "remote" side of the PTC elements (claim 12).

Noting especially Fig. 1 and col. 4, lines 50-53, and the desirability of avoiding the movement of a contact plate, requires a clip 18 that snugly holds the contact plate, and any "tolerance" greater than the size of the plate itself would be negligible. It is certainly possible, and frequently the case in manufactured or kit-type assemblies of diverse kinds, that an opening will be virtually the same size as the object inserted into it, affording a very snug friction fit, particularly where permanent and secure placement is desired.

The Examiner reiterates that the method of assembling the contact plate and the frame by molding is not germane to the patentability of the combination since the final product is still the product itself (i.e., product by process is still a product).

Claim Rejections - 35 USC § 103

Claims 13, 31, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over US'748 in view of US Pat. 6373705.

US'748 discloses an electrically insulating frame 11 and an electrically insulating/thermally conductive cover on the side of the contact plate opposite the side receiving the PTC elements. Crossbars 16 are "inwardly directed studs for the positive

retention of the PTC elements" since they are directed "inwardly" from struts 13, and they "positively retain" the PTC elements when the device is assembled.

The claims differ substantively from US'748 only in calling for the frame and insulating cover to be a polymer ceramic.

US'705 discloses, at col. 4, lines 37-46, a polymer ceramic insulating member 2 used to transfer heat away from a heated component. It would have been obvious to utilize the polymer ceramic for the frame and insulating cover of US'748 since US'705 discloses such to have properties which are clearly desirable in such PTC heater applications, where electrical contacts must be insulated while heat is efficiently transferred away from the PTC element.

While US'705 does not explicitly disclose bulges to secure the frame in a profile tube, since the acknowledged prior art already discloses that the frame and heater assembly must be inserted in a profile tube, the use of bulges to secure the frame in place does not patentably distinguish the claimed invention from the prior art. It would have been obvious to form bulges to secure the frame in the profile tube since one conventionally secures such an arrangement either by friction or glue; friction requires some part of the inserted frame to extend into contact with the tube, i.e., a "bulge."

Applicant is again encouraged to review the prior art cited but not applied when replying to this Office action.

Allowable Subject Matter

Claims 39, 42-44, and 46 are allowed.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are not persuasive.

At page 9 of the Response, with reference to US'748, Applicant asserts that between the contact plate and the portion of the frame in which it is secured, there exists a distance "greater **with tolerance** than the thickness of the contact plate," so that "it is held **more or less loosely**" (Examiner's emphasis). The specification does not disclose, either explicitly or implicitly, that the contact plate is thus loosely held. In fact the desirability of a stable and secure region of contact between the plate and the PTC element, to which the contact plate supplies electric current, a region whose size must be consistent to ensure consistent performance of the heaters manufactured according to US'748, implicates a firmly held contact plate.

As discussed above, the desirability of avoiding the movement of a contact plate, requires a clip 18 that snugly holds the contact plate, and any "tolerance" greater than the size of the plate itself would be negligible. It is certainly possible, and frequently the case in manufactured or kit-type assemblies of diverse kinds, that an opening will be

virtually the same size as the object inserted into it, affording a very snug friction fit, particularly where permanent and secure placement is desired.

At pages 9-10 of the Response, referring to the 35 USC 102 rejection, Applicant asserts that the contact plate of US'748 "does not lie inside the contour defined by the longitudinal struts and crossbars. The claims to which Applicant refers, 4, 8, and 1-13, do not recite this feature.

At page 10, Applicant states that the process by which the product is made "is discernable on the finished product,... achieves an extremely complete and tight connection,... [so that] the frame material penetrates into the microstructure (micropores) of the metal."

The product by process limitation of claim 8 recites just that "the contact plate is molded in the frame and, at least in a limited longitudinal portion... is completely and tightly surrounded by the frame." The Examiner notes firstly that Applicant's addition of the term "extremely" in the Response tacitly acknowledges the relative nature of the claim language it modifies, "complete and tight." But "extremely" is also a relative term, and while another relative modifier may intensify the sense of the phrase, it remains a *relative* adjectival phrase even so.

The claim does not recite that "the frame material penetrates into the microstructure (micropores) of the metal." A process of molding an electrically conductive plate into an insulating frame *does not necessarily entail* such an intimate bond. Such a bond would clearly depend on the particular materials used and temperature at which the process takes place, neither of which is recited in claim 8.

Regarding Applicant's insinuation, at page 11, that the contact plate of US'748 can be removed without damaging the frame, the rivet of US'748 is a permanent fastener: its removal would clearly damage the frame, and removal is required for the removal of the contact plate.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph M. Pelham whose telephone number is 571-272-4786. The examiner can normally be reached on M-F 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joseph M. Pelham/
Primary Examiner, Art Unit 3742
4/19/10